



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Peter de Groot et al. Art Unit : 2877
Serial No. : 10/795,808 Examiner : Unknown
Filed : March 8, 2004
Title : PROFILING COMPLEX SURFACE STRUCTURES USING SCANNING
INTERFEROMETRY

MAIL STOP AMENDMENT

Commissioner for Patents
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Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Applicants request consideration of the references listed on the attached PTO-1449 form. Under 37 C.F.R. § 1.98 (a)(2)(ii), only copies of foreign patent documents and/or non-patent literature are enclosed. Copies of any listed U.S. patents or U.S. patent application publications can be provided upon request.

This statement is being filed within three months of the filing date of the application or before the receipt of a first Office Action on the merits. Please apply any charges or credits to Deposit Account No. 06-1050, referencing 09712-341001.

Respectfully submitted,

Date: 3/29/06

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Substitute Form PTO-1449
(Modified)U.S. Department of Commerce
Patent and Trademark OfficeAttorney's Docket No.
09712-341001Application No.
10/795,808**Information Disclosure Statement
by Applicant**

(Use several sheets if necessary)

Applicant
Peter de Groot et al.Filing Date
March 8, 2004Group Art Unit
2877**U.S. Patent Documents**

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA	4,660,980	04/1987	Takabayashi et al.			
	AB	4,818,110	04/1989	Davidson			
	AC	5,042,949	08/1991	Greenberg et al.			
	AD	5,042,951	08/27/1991	Gold et al.			
	AE	5,112,129	05/1992	Davidson et al.			
	AF	5,135,307	08/1992	de Groot et al.			
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	AI	6,249,351	06/19/2001	de Groot			
	AJ	6,259,521	07/10/2001	Miller et al.			
	AK	6,377,349	04/23/2002	Fercher			
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	AU	2005/0057757	3/17/2005	de Lega et al.			
	AV	2005/0068540	03/31/2005	de Groot et al.			
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	AX	2005/0078319	4/14/2005	de Groot			
	AY	2005/0088663	4/28/2005	de Groot et al.			
	AZ	2005/0146727	7/7/2005	Hill			
	AAA	2005/0237534	10/27/2005	Deck			

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Substitute Form PTO-1449 (Modified) Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 09712-341001	Application No. 10/795,808
	Applicant Peter de Groot et al.		
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U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	BA	2006/0012582	01/19/2006	de Lega			
	BB	H1972 H	07/03/2001	Inoue			
	BC						

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	BD	DE 4108944	09/24/1992	Germany	G01B	9/02	Abstract Only	
	BE	DE 4309056	09/22/1994	Germany	G01B	9/02	Abstract Only	
	BF	GB 2385417	08/20/2003	Great Britain	G01B	11/24		
	BG	WO 97/44633	11/27/1997	WIPO	G01B	11/24		
	BH	WO 03/062802	07/31/2003	WIPO	G01N	21/47		
	BI							

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	BJ	C. Akcay et al., "Spectral shaping to improve the point spread function in optical coherence tomography", <u>Optics Letters</u> , Vol. 28, No. 20, pp. 1921-1923 (October 15, 2003)
	BK	R.M.A. Azzam et al., "Reflection and Transmission of Polarized Light by Stratified Planar Structures", <u>Ellipsometry and Polarized Light</u> , Elsevier Science B.V. ISBN 0 444 87016 4 (Paperback) pp. 267-363 (1987)
	BL	R.M.A. Azzam et al., "Ellipsometric function of a film-substrate system: Applications to the design of reflection-type optical devices and to ellipsometry", <u>Journal of the Optical Society of America</u> , Vol. 5, No. 3, pp. 252-260
	BM	M. Bashkansky et al., "Signal Processing for Improving Field Cross-correlation Function in Optical Coherence Tomography", <u>Supplement to Optics & Photonics News</u> , 9(5) (May, 1998)
	BN	Berman et al., "Review of In Situ & In-line Detection for CMP Applications", <u>Semiconductor Fabtech - 8th Edition</u> , pp. 267-274
	BO	A. Bosseboeuf et al., "Application of microscopic interferometry techniques in the MEMS field", <u>Proc. SPIE</u> , 5145, pp. 1-16 (2003)
	BP	M. Davidson et al., "An Application of Interference Microscopy to Integrated Circuit Inspection and Metrology", <u>Proceedings of SPIE</u> , Vol. 775, pp. 233-247 (1987)
	BQ	J.E. Greivenkamp, "Generalized data reduction for heterodyne interferometry", <u>Opt. Eng.</u> , Vol. 23 No.4, pp. 350-352 (July/August 1984)

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Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 09712-341001	Application No. 10/795,808
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Peter de Groot et al.	
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Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	CA	P de Groot et al., "Signal modeling for low coherence height-scanning interference microscopy", <u>Applied Optics</u> , Vol. 43 No. 25, pp. 4821-4830 (September 1, 2004)
	CB	P. de Groot, "Derivation of algorithms for phase-shifting interferometry using the concept of a data-sampling window", <u>Appl. Opt.</u> , 34(22), p. 4723-4730 (1995)
	CC	P. de Groot et al., "Signal modeling for modern interference microscopes", <u>SPIE Proceedings</u> , 5457-4 (2004)
	CD	Peter de Groot et al., "Determination of fringe order in white-light interference microscopy", <u>Appl. Opt.</u> , 41(22) pp. 4571-4578 (2002)
	CE	P.A. Flournoy et al., "White-light interferometric thickness gauge", <u>Appl. Opt.</u> , 11(9), pp. 1907-1915 (1972)
	CF	G. Hausler et al., "Coherence Radar and Spectral Radar – New Tools for Dermatological Diagnosis", <u>Journal of Biomedical Optics</u> , Vol. 3, No. 1, pp. 21-31 (January, 1998)
	CG	R.D. Holmes et al., "Scanning microellipsometry for extraction of true topography", <u>Electronics Letters</u> , Vol. 31, No. 5, pp. 358-359 (March 2, 1995)
	CH	Seung-Woo Kim et al., "Thickness-profile measurement of transparent thin-film layers by white-light scanning interferometry", <u>Applied Optics</u> , Vol. 38, No. 28, pp. 5968-5973 (October 1, 1999)
	CI	Kieran G. Larkin, "Efficient nonlinear algorithm for envelope detection in white light interferometry", <u>J. Opt. Soc. Am A</u> , pp. 832-843 (1996)
	CJ	Kujawinska, Malgorzata, "Spatial Phase Measurement Methods", <u>Interferogram Analysis: Digital Fringe Pattern Measurement Techniques</u> , IOP Publishing Ltd. 1993, pp. 141-193
	CK	Lee et al., "Profilometry with a coherence scanning microscope", <u>Appl. Opt.</u> , 29(26), pp. 3784-3788 (1990)
	CL	I. Lee-Bennett, "Advances in non-contacting surface metrology", <u>OF&T Workshop</u> , paper OTuC1 (2004)
	CM	K. Leonhardt et al., "Micro-Ellipso-Height-Profilometry", <u>Optics Communications</u> , Vol. 80, No. 3, 4, pp. 205-209 (January 1, 1991)
	CN	Y. Liu et al., "Common path interferometric microellipsometry", <u>SPIE</u> , Vol. 2782, pp. 635-645 (1996)
	CO	Lyakin et al., "The interferometric system with resolution better than coherence length for determination of geometrical thickness and refractive index of a layer object", <u>Proceedings of the SPIE – The International Society for Optical Engineering SPIE-INT. Soc. Opt. Eng USA</u> , Vol. 4956, pp. 163-169 (July, 2003)
	CP	C.J. Morgan, "Least-Squares estimation in phase-measurement interferometry", <u>Apt. Let.</u> , 7(8), pp. 368-370 (1982)
	CQ	Ngoi et al., "Phase-shifting interferometry immune to vibration", <u>Applied Optics</u> , Vol. 40, No. 19, pp. 3211-3214 (2001)
	CR	A.V. Oppenheim et al., "10.3: The time-dependent Fourier Transform", <u>Discrete-Time Signal Processing</u> , 2 nd Edition, pp. 714-722 (Prentice Hall, New Jersey, 1999)
	CS	M.C. Park et al., "Direct quadratic polynomial fitting for fringe peak detection of white light scanning interferograms", <u>Opt. Eng.</u> , 39(4), pp. 952-959 (2000)
	CT	W.H. Press et al., "Linear Correlation", <u>Numerical Recipes in C</u> , Cambridge University Press, 2 nd Edition, pp. 636-639 (1992)

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	DA	P. Sandoz et al., "Optical implementation of frequency domain analysis for white light interferometry", <u>Proceedings SPIE</u> , Vol. 2545, pp. 221-228 (June, 1995)
	DB	P. Sandoz et al., "High-resolution profilometry by using phase calculation algorithms for spectroscopic analysis of white-light interferograms", <u>Journal of Modern Optics</u> , Vol. 43, No. 4, pp. 701-708 (1996)
	DC	P. Sandoz et al., "Processing of white light correlograms: simultaneous phase and envelope measurements by wavelet transformation", <u>SPIE</u> , 3098, pp. 73-82 (1997)
	DD	U. Schnell et al., "Dispersive white-light interferometry for absolute distance measurement with dielectric multilayer systems on the target", <u>Optics Letters</u> , Vol. 21, No. 7, pp. 528-530 (April, 1996)
	DE	J. Schwider et al., "Dispersive interferometric profilometer", <u>Optics Letters</u> , Vol. 19, No. 13, pp. 995-997 (July, 1994)
	DF	C.W. See et al., "Scanning optical microellipsometer for pure surface profiling", <u>Applied Optics</u> , Vol. 35, No. 34, pp. 6663-6668 (December 1, 1996)
	DG	M. Totzeck, "Numerical simulation of high-NA quantitative polarization microscopy and corresponding near-fields", <u>Optik</u> , Vol. 112, No. 9, pp. 399-406 (2001)
	DH	R. Tripathi et al., "Spectral shaping for non-Gaussian source spectra in optical coherence tomography", <u>Optics Letters</u> , Vol. 27, No. 6, pp. 406-408 (2002)
	DI	D. Willenborg et al., "A novel micro-spot dielectric film thickness measurement system", <u>SPIE</u> , Vol. 1594, pp. 322-333 (1991)
	DJ	

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